

REMARKS

The specification has been amended above to insert the serial number of the referenced co-pending patent application on pages 1 and 7.

The present application stands with its independent claims 1, 2, 3, 10, 11, 12, 19, 20 and 21 rejected under 35 U.S.C. §102(e) as being anticipated by the cited Borella et al. (Borella) patent. The dependent claims have been rejected under 35 U.S.C. §102(e) or under 35 U.S.C. §103(a) over Borella in view of the cited Devine et al. patent. For the reasons below, Borella is not believed to anticipate any of the independent claims.

Although the title of Borella is "Method and System for Distributed Network Address Translation for Mobile Network Device," what Borella describes is not "Network Address Translation (NAT)" as that term is conventionally used in the art since no address translations are performed in the network. Rather what Borella teaches is address replacement at the client and teaches away (see, column 2, line 21 – column 3, line 58) from network address translation which would be performed by a router or other device in the network. In Borella, a first device (e.g., a client, which in the described embodiment is a mobile device) requests a range of port numbers to use in packet communication. The second device (e.g., router) allocates to that client a range of port numbers independent of any protocol, and replies to the client telling it which port numbers have been allocated to it. The client then replaces the port number it would otherwise use by one of the port numbers allocated to it by the router. When the client thereafter wants sends a packet, that packet is encapsulated within another IP packet wherein in the internal IP packet, the source address is one of the global IP addresses allocated to it by the router and the destination address is the address on the Internet to which the packet is directed. In the external packet, the source address is the actual local address of the client and the destination IP

address is the local IP address of the router. When the encapsulated packet arrives at the router, it strips off the external packet and forwards the rest of the internal packet onto the Internet to the destination address indicated in the encapsulated packet. When the router receives a packet from the destination, the router consults its Port Allocation Protocol (PAP) table to determine which client has been allocated that destination port number, and forwards the packet accordingly to that client.

Since there is no translation of one address to another in the network, but merely replacement by the client in a packet it wants to send of its own source address with one of the global addresses supplied to it by the router and then encapsulation of the packet, what Borella discloses is not a network address translation as is used and claimed by applicants.

Most significantly, Borella is incapable of accommodating an unspecified protocol of which the router is unaware. In Borella, it is assumed that the client can abstractly request a port number from the router and that the router will supply a port that it can use. There is no suggestion or teaching of how the router would be able to determine in a packet it receives from a source on the Internet the location within the packet of the port number. When such a packet arrives at the router that is directed to a client to which the router has allocated a port number to use, the router needs to know where within that packet the destination port number is located. That location within the packet of that destination port number varies according to the protocol being used. That location includes where in the packet the destination port number begins and the length within the packet of the port number. If the protocol being used to transmit the packet is supported, then the router knows that information. If it is an unsupported protocol, then the router has no way of knowing where within the packet the port number is located. Thus, if the router in Borella assumes in an

incoming packet that the destination port number is located in same position as it is in a TCP packet, but the packet is using, for example, an unsupported ISAKMP protocol for which the destination port number is located in a different location within the packet, the router will interpret the incorrect bits as being the port number. When the router in Borella consults then its Port Allocation Protocol table, it will be unable to find which client has been allocated to that port number, or alternatively, it will associate the packet with the wrong client. Thus, absent that location information, Borella is incapable of properly directing packets using a protocol that is unsupported to the proper client. Thus, Borella is not capable of handling “a protocol not directly supported”. That location information needs to be provided for network address translation for an unsupported protocol, which is what is taught and claimed by applicants and is not at all addressed by Borella.

Borella does not at all define a generalized port number in the manner disclosed and used in the present application, as a port number that can be used by an unsupported protocol and which has a location not known *a priori* by the router. Borella does not receive a request “that defines for a protocol not directly supported by the NAT a generalized port number (GPN) associated with that unsupported protocol and its location in each packet, the location comprising an indication of a bit position within a packet of where the GPN begins and a length of the GPN,” as each of applicants’ independent claims requires. Furthermore, Borella’s Port Allocation Protocol table (as illustrated in FIG. 8) does not define for such an unsupported protocol “an association between a client’s private IP address and GPN, a NAT’s assigned global IP address and GPN, and a foreign IP address.” Rather, Borella’s PAP table only associates the port numbers assigned to a client by the router and the address of the client. Applicants’ translation table, which includes an entry “for [an unsupported] protocol an association between a client’s private IP address and GPN, a NAT’s assigned

global IP address and GPN, and a foreign IP address”, is not at all equivalent to Borella’s PAP table.

In summary, Borella does not do network address translation and in fact teaches away from it; is not capable of handling an unsupported protocol; does not define for such an unsupported protocol a GPN and its location in a packet that includes an indication of the bit position at which the GPN starts and its length; and doesn’t define in a table for such an unsupported protocol an association between a client’s private IP address and GPN, a NAT’s assigned global IP address and GPN, and a foreign IP address. For each of these reasons, each of the independent claims are respectfully submitted as being allowable.

It is noted that the independent claims have been amended above for clarification purposes to distinctly point out that “location” as used in the claims and is supported by the specification comprises “an indication of a bit position within a packet of where the GPN begins and a length of the GPN.” This amendment in no way is intended to be further limiting but has been inserted to emphasize “location” and define what would be the well known meaning of that term in the context of the present invention.

Inasmuch as the independent claims are believed to be allowable, each of the dependent claims thereon should also be allowable. I would like to note, however, that Examiner’s reference to column 4, lines 14-15 as disclosing an expiration time for an entry in applicants’ translation table as per dependent claims 4, 13 and 22 is without merit. Specifically, column 4, lines 14-15 refers to an ephemeral port on the mobile device and is related to the local operation of that host, not having anything at all to do with network translation. In fact, reading of the cited section states “one or more default or ephemeral ports are replaced with one or more locally-unique ports”, the locally unique ports being

those provided to the mobile device by the router. There is no suggestion of an entry in a translation table for an unsupported protocol that defines an expiration time for that entry.

In view of the foregoing, allowance of all the claims presently in the application and passage to issue of the subject application is respectfully requested. If the Examiner should feel that the application is not yet in a condition for allowance and that a telephone interview would be useful, he is invited to contact applicants' undersigned attorney at 973, 386-8252.

Respectfully submitted,

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